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STATISTICS IN THE SERVICE OF THE
MUNICIPALITY.*

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It would be superfluous to take the time of this audience for an extended preliminary dissertation upon the need of applying statistical methods to the study of municipal conditions and activities. The members of this Association do not need to be told that the rapidly increasing concentration of population in large cities, the alarming growth of municipal expenditures and indebtedness, and the widespread prevalence of inefficiency, wastefulness, and corruption in the government of American municipalities constitute a problem of the first magnitude for American democracy.

At the present time about one third of the total population of the United States is found in cities of over 30,000 inhabitants. The total governmental costs of the 195 cities of this size amount to nearly one billion dollars, as contrasted with expenditures of roundly six hundred and fifty million dollars by the National government, and less than two hundred million dollars by the state governments. The total indebtedness of these cities approaches closely to the three billion dollar mark, or sixty-nine dollars per capita, as against one billion dollars indebtedness, or eleven dollars per capita, for the National government. Moreover, population, expenditures, and indebtedness are all increasing in the cities at a much faster pace than for the nation at large. These figures emphasize sharply the urgency of careful statistical inquiry into the conditions created by municipal expansion.

I shall discuss this subject from the point of view of American conditions and experience, with special reference to the city of Boston. It may not be inappropriate in this connection to remind the members of this Association that Boston has led the way and set the pace in the development of statistical

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service in American municipalities. The first adequate and scientific city census taken in this country was the Boston census for the year 1845, taken under the direction of Mr. Lemuel Shattuck, one of the founders of this Association, who introduced new and improved methods of enumeration and tabulation. His report, published in 1846, is a genuine statistical classic. This Boston census of 1845 was confessedly so superior to any previous census that Mr. Shattuck's advice and assistance were sought by the United States Census Board in 1849, in preparing the schedules for the seventh census of 1850. Five of the six schedules used in that census were designed and prepared principally by Mr. Shattuck. Thus, in certain important respects, the city of Boston showed the Commonwealth of Massachusetts and the United States how to take a census.

I may, perhaps, be pardoned for mentioning here the further fact that Boston was the first city in this country to establish a municipal statistical department. The Boston Department of Municipal Statistics was created in 1897, at the instance of Mayor Josiah Quincy. It was designed to serve as a non-political scientific bureau, for the compilation and publication of municipal statistics, and it has been consistently maintained on this plan, notwithstanding assaults by unappreciative or apprehensive politicians. This, I submit, is an achievement of no mean order, especially in view of the failure to maintain similar departments established in New York, Chicago, and Baltimore.

In considering the question of what service statistics can render to the municipalities, it will be well first to review what has already been done in this field, and then to inquire into the possibilities of further extension and improvement of the work. The development of municipal statistics in this country has followed four main lines:

1. Collection and publication of financial statistics of cities by the National government;
2. Investigation and supervision of municipal finances by State governments;
3. Compilation and publication of financial and social statistics of cities by municipal departments of statistics;

4. Inquiry into municipal departments and conditions by bureaus of research under private management.

1. A beginning was made in the collection and publication of municipal statistics by the National government in 1899, when the first annual report on the financial statistics of cities having a population of over 30,000 was issued by the Department of Labor, under authorization of an Act of Congress. Then in 1902, when the census bureau was placed on a permanent basis, the compilation of these statistics was transferred to that bureau, and reports on the financial statistics of cities of over 30,000 population have been published each year from 1902 to 1912. The number of cities covered by these reports has increased during the period from 146 to 195. It was expected, when the collection of municipal statistics was first undertaken by the National government, that the information could be gathered on schedules sent out to be filled in by the local officials. But on account of the unsystematic and divergent methods of municipal accounting and reporting in vogue throughout the country, this course was found to be impracticable, and it became necessary to send out field agents to secure the information on the ground.

It deserves to be noted that the method of tabulation and presentation employed in these reports conforms in general to a scheme devised by the Committee on Uniform Municipal Accounting and Statistics, of the National Municipal League, established in 1901, which did valuable pioneer work in this field. This committee made five annual reports in the period 1901-1905, and its members contributed twelve papers to the proceedings of the League. Dr. Edward M. Hartwell, secretary of the Boston Department of Statistics, was its chairman. Because of the chaotic condition of municipal statistics, the committee confined its work almost exclusively to matters relating to accounting and finance. The committee put forth a series of schedules which came to be known as the Uniform System of the National Municipal League. The characteristic feature of these schedules was the grouping of departmental receipts and disbursements under about a dozen general heads, for example; General, Government, Public Safety, Public Works, Public Debt, etc., according to the functions subserved

by the several departments of city government as they were then organized. The Committee was instrumental in stimulating discussion by accountants and fiscal officers of the principles of accounting and of measures calculated to promote reasonable uniformity in city bookkeeping. The National Municipal League's schedules constituted, in effect, a model comptroller's or auditor's report. In accordance with the schedules, the annual financial reports of various cities were restated in print, to show how the group system of uniform rubrics would work out in practice. Thus the League's schedules were utilized in fiscal reports of Newton, Mass., for 1900, Boston, 1900 and following years, Baltimore, 1901 and 1902; Chicago, 1902, Minneapolis, 1903, and Duluth, 1905.

2. In the field of investigation and supervision of municipal finances by state governments, two different plans of action have been tried. One is the compulsory method of Ohio, which in 1902 introduced a uniform system of municipal accounting, under the control of the state auditor, with the power to prescribe forms of fiscal reports for all cities. The other is the educational method of Massachusetts, as it may be termed. Instead of installing at once a uniform municipal accounting system throughout the Commonwealth, the Massachusetts legislature passed, in 1906, a law requiring auditors of cities and towns to furnish annually, on blanks prepared by the Bureau of Statistics, statements of revenues, expenditures, and indebtedness. The first report on Comparative Financial Statistics of Cities and Towns in Massachusetts for the year 1906 was issued by the Bureau of Statistics in 1908. The compilation of these statistics disclosed difficulties arising from the lack of uniformity or system in handling receipts and disbursements, and of proper methods of accounting on the part of the cities and towns. The result of the findings of the Bureau was the legislation of 1910, requiring notes to be issued in forms prescribed by the director of the Bureau of Statistics, and to be certified by him; also providing for the appointment of city and town accountants and for the installation of improved systems of accounting, with auditing by the director of the Bureau of Statistics,—upon the acceptance of these two provisions by the municipality. This pioneer work bore

gratifying results in the awakening of municipal authorities to the importance of adopting modern methods of financial administration.

In 1911 the Bureau of Statistics was ordered to investigate the indebtedness of cities and towns against which no sinking funds were in process of accumulation, or for the extinguishment of which no annual payments on the principal were being made. The Bureau made two investigations,—one a partial and preliminary inquiry, the other complete and exhaustive,—and reported its findings with recommendations. The investigations were supplemented by further inquiry through a legislative committee. The recommendations of the Bureau were finally embodied in the important legislation of 1913, which includes sixteen Acts relating to municipal finances. The most important of these is the Act relating to municipal indebtedness, which supplanted the old law of 1875. This Act was aimed at four evils: first, incurrence of funded or fixed debt for current expenses; second, temporary borrowings to an unlimited amount, in anticipation of tax collections; third, diversion of the principal of trust funds to current expenses for unauthorized objects, and incurrence of other liabilities without proper provision for payment; fourth, neglectful and costly management of sinking funds.

This legislation is a notable example of scientific law-making by application of the statistical method. The director of the Bureau, Mr. Charles F. Gettemy, who deserves great credit for the success of this experimental undertaking in state investigation and supervision of municipal finances, well says: "The true method of undertaking to accomplish a reform of long-standing evils should be, in my judgment, by a preliminary, scientific diagnosis of conditions, and I doubt whether any state can show an instance of legislation more thoroughly pre-digested, if I may use the term, than that which, without a dissenting voice in either branch of the legislature, has just been placed upon the statute books of Massachusetts for the purpose of restricting and regulating the incurrence of municipal indebtedness in accordance with sound financial principles."

3. In the establishment of statistical bureaus, as branches

of the city government, only a very small beginning has been made in this country. The field of municipal statistics proper remains in the United States a barren and neglected one. Boston led the way, as has been stated, establishing a department of statistics in 1897. The example of Boston in this respect was followed by New York, Baltimore, and Chicago, but the statistics departments in these cities were short-lived. Baltimore now has a municipal reference library, which performs some of the functions of a statistical department.

The Statistics Department of the city of Boston is in charge of a board of five trustees, appointed by the Mayor for a term of five years. The work is under the immediate direction of a secretary, Dr. Edward M. Hartwell, who has served the Board most efficiently from the beginning. The work consists in furnishing statistical information for use by the Mayor and heads of departments, answering inquiries of citizens of Boston and others parties, serving as a bureau for the exchange of documents with the principal cities of this country and Europe, and issuing regular and occasional statistical publications. The publications include: first, the *Municipal Register*, or hand-book of the city government; second, the *monthly Bulletin*, now published quarterly, containing tables grouped under twenty-two general heads, showing movement of population, work of city departments, statistics of the port of Boston, and other matters; third, a series of special publications relating chiefly to receipts and expenditures. In 1898-99 and for four months in 1900 a *City Record* was published weekly by the Statistics Department, but its issue was suspended through the refusal of the legislature to make the *City Record* self-supporting as the official gazette of the city government. Since the revival of the *City Record*, through the adoption of the new charter in 1910, the publication has been self-supporting, the editor being appointed by the Mayor. The Statistics Department has made many special studies, at the instance of the Mayor and Council, and heads of departments, which are too numerous to mention. Certainly the publications of this Department in the past fifteen years will bear comparison in point of variety, volume, and scientific method with those of any other city in this country.

4. The fourth line of statistical activity in the municipal field is represented by the well-known work of the New York Bureau of Municipal Research. Bureaus of municipal research have also been established in Philadelphia, Cincinnati, and Chicago. In Boston a Bureau of Municipal Research has been installed by the Finance Commission as an adjunct to its organization.

The New York Bureau was incorporated in May, 1907, its objects as stated in the charter being "to promote efficient and economical municipal government; to promote the adoption of scientific methods of accounting and reporting the details of municipal business, with a view to facilitating publicity in matters relating to municipal problems; to collect, to classify, analyze, to correlate, to interpret, and to publish facts as to the administration of municipal government." The Bureau was placed under the direction of William H. Allen, Henry Bru  re, and Frederick A. Cleveland. The methods of the Bureau are, in brief, to confer with officials responsible for the municipal department or conditions to be studied and secure their co  peration; to study the organization and distribution of powers and duties in the department; to examine the records of work done and the cost in the case of each official, each branch, or each class of employees; to co  perate with department heads in devising remedies through a change of system, without touching the personnel of the department directly; to present a formal report to the department head, the city executive officials, and the public, with description, criticism and suggestion; to follow up the first report in the press and through all agencies of publicity until results are secured.

Among the notable accomplishments to be credited to the Bureau may be mentioned: the removal of an incompetent Borough president by the Governor, upon evidence furnished by the Bureau; reorganization of the department of finance, with improved methods of inspection, audit, and payment; accounting reforms for all city departments; budget reform, exhibits, publicity; establishment of a Bureau of Child Hygiene in the Department of Public Health; changes for economy and efficiency in various departments; creation of the Herman

E. Metz National Fund for Promoting Efficient Municipal Accounting and Reporting in American Cities; establishment of a National Training School for public service, under the direction of the Bureau.

The New York Bureau has made a notable record for varied and strenuous activity. Its numerous reports and pamphlets make strong appeal to popular attention through skilful and forceful presentation of facts. It has done admirable service in the education of public opinion and the promotion of intelligent and vigilant citizenship.

In the light of this survey of accomplishment, let us next inquire in what ways the service rendered by statistics to the municipality can be extended and improved.

1. The municipal statistics collected and published by the National government through the Bureau of the Census are excellent, so far as they go, but they do not go far enough. The scope of this work should be extended to include social statistics of cities. Previous reports contain little more than statistics of receipts, expenditures, and indebtedness. Acknowledgment should be made of the fact that the reports for the years 1902, 1903, and 1907 contain some tables relating to other branches of municipal statistics besides financial statistics, for example: statistics relating to the organization and work of the police and fire departments; retail liquor saloons and licenses; water and sewerage works; resources and patronage of public libraries; length, area, construction, and care of streets; disposal of garbage; milk and dairy inspection; mortality statistics; and public school statistics. The last report for 1912, however, gives in addition to financial statistics, only figures of area, estimated population, and school attendance. The financial statistics, moreover, are less comprehensive than those contained in previous reports. General tables, such as those just mentioned, are conspicuous by their absence. It would seem that the Bureau of the Census ought to attempt, once in five years, to enlighten the public on other branches of municipal statistics besides those relating to financial administration.

It is greatly to be desired that the National government should issue a publication as comprehensive and detailed as

the Statistisches Jahrbuch Deutscher Städte. The nineteenth issue of this publication is edited by Professor Doctor M. Neefe, Director of the Statistical Office of Breslau, in collaboration with thirty-two experts occupying similar positions in other German cities. This issue of the Year Book embraces thirty-one special articles, covering 859 pages of text and comparative tables, mostly upon subjects quite beyond the ken of our municipal statisticians, for example; movement of population in 1910; building operations and dwellings; market in 1910; saving banks in 1910; the business of hotels and inns in 1907, 1910, and 1911; industrial tribunals in 1909 and 1910; passenger traffic in 1910, including omnibus, cab, and street-car traffic, as well as railroads and waterways; postal, telegraph, and telephone traffic in 1910 and 1911. Comparison of the nineteenth with the ninth issue of the Year Book shows an increase from 373 to 859 in the number of pages, from twenty-five to thirty-one in the number of special articles, and from nineteen to thirty-two in the number of Doctor Neefe's collaborators, who represented sixteen different German cities in 1901 and twenty-four in 1913.

2. A similar extension of scope is desirable in the case of the state publications of municipal statistics. Here, again, the reports contain only financial statistics. The need of extension to include social statistics is appreciated by the Director of the Massachusetts Bureau of Statistics. He is of the opinion, however, that this larger undertaking must be deferred until the work of collecting financial statistics shall have been put on a satisfactory basis. Concerning the further development of the statistical service rendered by the state to the municipality, he remarks: "In view of the laxity with which municipal accounts have hitherto been kept, we shall be accomplishing a good deal when we are able to show what our cities and towns are spending and the functions for which the expenditures are made; but it is, of course, of the utmost importance that we finally undertake to show what the people are getting for their money. When we have shown, for example, on as comparable and uniform a basis as possible, what our cities are spending for highways, we have done something; but mere statistics of expenditures, at best, tell only half the story, for

what a city ought to spend on highways is not reflected by the ledgers, however accurately and properly the accounts are kept. Some day, I hope, we shall be able to correlate with the expenditures for highways, statistics of mileage with a classification of costs based upon different kinds of pavements, etc., also to compare the expenditures for education with the number of pupils attending the schools, the aggregate amount spent for school teachers' salaries with the actual number of school teachers benefiting therefrom, and so on all down the line."

3. The first step in extending the statistical service rendered by the municipality to itself is obviously the establishment of a permanent non-political statistical bureau in every large city. On the continent of Europe, municipal statistical offices abound. The best organized and most efficient departments are found in those cities in which the problems of modern urban life have been met most successfully; for example, Berlin, Paris, Liepsic, and Vienna. In 1913, forty-six German cities having an aggregate population of 13,437,388 had statistical offices; those of Bremen and Berlin established in 1861 and 1862, respectively, are the oldest. Twenty-two of the whole number, or 48 per cent., have been established since 1900. In contrast with this extension of municipal statistical service in Europe, the field of such service has been neglected in the United States, because the majority of those who control the purse and administer the affairs of American cities are too short-sighted to devise appropriate methods or too supine and parsimonious to provide ways and means for cultivating the field.

The usefulness of a municipal statistical office can be increased in various directions beyond any results thus far achieved in an American city. One way to utilize such a department more effectively is to give it editorial supervision over the statistical work of other departments. There is great need of expert direction of the methods of recording and reporting statistics in the various departments of municipal government. The statistics of municipal administration need overhauling at the source. A vast amount of statistical rubbish is yearly dumped into print. The really valuable information is often presented in such crude fashion as to be mean-

ingless until worked over and shaped up properly. Dr. E. M. Hartwell makes the following pertinent comment on the existing methods of statistical presentation: "Municipal reports teem with tabular presentations of clotted facts. Too often they are ephemeral by-products of the administrative machinery. As raw material and a reminder of what is desirable, they often have some value, a value which is seldom proportionate to the cost in labor and money of separating the ore from the dross and refining the pig-metal till it becomes malleable and ductile." The duplication and confusion in department statistics could be eliminated by giving the statistical bureau authority to prescribe or recommend methods of statistical treatment.

Another opportunity of added usefulness for municipal statistics departments is through systematic coöperation with commercial, civic, and other organizations. The statistical service should be made widely valuable to the citizens at large. The possibilities in this direction are illustrated by a report prepared by the Boston Statistics Department for use in the recent movement to secure a regional bank for Boston. The report showed in a graphic way the large role played by Boston in the industrial, commercial, and financial activities of the nation, and the statistics made a most effective argument for the location of one of the regional banks in the city.

Finally, a municipal statistics department should assemble and publish in fairly compact and properly intelligible form the salient facts and figures concerning all the varied activities of the municipality. The municipal year-book should give a comprehensive picture of the life of the city in its essential phases. In this respect American municipal statistics fall far short of the state of the art as represented by the output of the average city statistical office on the continent of Europe. Indeed, no city in the United States publishes a year-book that will bear comparison as to diversity and comprehensiveness of contents and scientific presentation of data with the municipal year-book of the city of Tokio, Japan. The municipal year-book in an American city should be the source from which the citizen could get the facts about the food supply, the transportation system, the city markets,

street cleaning and paving, garbage collection and all other details of municipal housekeeping; the schools, parks, baths, playgrounds; the port, docks, terminals, freight movement; the banks, trusts companies, stock exchange; the churches, charities, hospitals, agencies of poor relief, and organizations for civic and social betterment; the hotels, theatres, clubs, and recreational institutions; the courts, jails, and reformatory agencies; the figures of births, deaths, sickness, accident, unemployment, and so on;—in short, all the multiform activities that make up the life of that extraordinarily interesting social organism, the American city. A year-book of this scope would be of invaluable assistance to officials, students, editors, publicists, social workers, and all persons interested in municipal affairs.

4. It is not possible to suggest any general program for the privately endowed and controlled bureaus of municipal research. This work must shape itself according to the concrete conditions and problems of the municipality in question. There is real need and place for such a bureau, to supplement the work of a regular statistics department in the city government. The latter as a coördinate branch of the municipal organization cannot investigate and criticize the other departments without imperiling its influence and even its existence. A bureau of municipal research supported by private contributions is not trammelled in this way. The rôle of such a bureau, however, is a peculiarly difficult one to play, for the way of the reformer or informer is often as hard as that of the transgressor. It is not easy for a research bureau to escape a reputation for chronic fault-finding and constant scolding. The temptation is to make too much noise at too frequent intervals. The directors of such work should bear in mind that constant barking dulls the public ear. The president of one of the most successful commercial organizations in this country recently said to me in commenting upon the proper policy in advertising: "Never yell unless you have something to yell about, and then yell like ——." This would make a good motto for a bureau of municipal research.

In general, finally, the chief need in the development of municipal statistical service in this country is extension and

coördination all along the line from the national to the local service. The various branches of this service, now independent and unrelated, must be brought into some sort of coherent connection. It is only when this service shall have been systematized and correlated thoroughly that statistics can render the full measure of possible usefulness to the municipality, for the general information of the citizens, the prevention of waste and corruption, the promotion of efficiency and economy, the scientific guidance of reform movements, and the effective advancement of the cause of municipal betterment.